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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,246	01/26/2000	David H. Hanes	10991037-1	8311

22879 7590 02/20/2004

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EXAMINER

LE, DIEU MINH T

ART UNIT	PAPER NUMBER
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2114

DATE MAILED: 02/20/2004

2

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/491,246

Applicant(s)

HANES ET AL.

Examiner

Dieu-Minh Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**Part III DETAILED ACTION**

**Specification**

1. Claims 1-20 are presented for examination.

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable Pearce et al. (US Patent 5,896,534 hereafter referred to as Pearce) in view of Chew (US Patent 6,389,560).

As per claim 1:

Pearce explicitly teaches:

- A system for providing communication between a computer application executing in a real-mode environment [col. 4, lines 51-61] and a USB storage device [fig. 5, abstract, col. 1, lines 8-16] comprising:
  - a computer system including a storage means and a processing means [col. 4, lines 35-38 and col. 5, lines 43-44].

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- a computer application capable of being executes utilizing processing means wherein computer application executes in a real-mode environment in which USB is not supported [col. 4, lines 8-22].
- a USB storage device coupled to computer system [col. 4, lines 34-35 and col. 6, lines 18-21].

Pearce does not explicitly teach:

- a real-mode driver operable to enable communication between computer application and USB storage device.

However, Pearce does disclose capability of:

- A computer system for communicating between program executing and a hardware device including information transferring [abstract, fig. 5, col. 4, lines 51-61] comprising capabilities of:
  - device drivers [col. 7, lines 49-50] used for computer devices to communicating with computer system [fig. 5];
  - controller I/O trap program to intercept communication between USB controller and CPU [col. 8, lines 15-18];
  - USB control instructions used for communication between application or OS [col. 9, lines 10-22];

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- a USB service routine used for communication between USB controller and external devices [col. 6, lines 18-33].

In addition, Chew explicitly teaches:

- A system and method for testing USB system comprising a test application and a test application driver [abstract, fig. 8, col. 1, lines 5-9];  
comprising:
  - a USB interpreter comprising test application and a test application driver [col. 2, lines 28-30] used for communication between computer system and devices [fig. 8];
  - USB interpreter used for debugging session [col. 2, lines 46-47].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention first, to realize the Pearce's computer system comprising **device drivers used for computer devices to communicating with computer system as well as USB service routine used for communication between USB controller and external devices** as being the real-mode driver operable to enable communication between computer application and USB storage device as claimed by Applicant. This is because the Pearce's USB driver (i.e., a real-mode driver)

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has to be employed within the computer system in order for computing devices to communicating with USB application under certain computer operating system. By utilizing this approach, data can be transferred in real time process under debugging, data recovery, or normal operation via USB means; second one would modify the Pearce to explicitly including the USB interpreter comprising test application and a test application driver used for communication between computer system and devices as taught by Chew in supporting the computer application data exchanging and storage via USB functionality.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide the system processor based function with a USB mechanism to enhance the communication between computer application and computing devices (i.e., peripheral communication devices, such as USB storage device). That is by performing data exchanging between or among computing devices, the computer system can execute applications for testing, debugging, data failure detection and recovery process.

As per claims 2 and 4:

Pearce explicitly teaches:

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- A system for providing communication between a computer application executing in a real-mode environment [col. 4, lines 51-61] and a USB storage device [fig. 5, abstract, col. 1, lines 8-16] comprising:

- storage means consisting of a hard drive, a floppy drive, an optional drive, RAM, ROM, etc... [fig. 5, col. 1, lines 29-35 and col. 6, lines 17-18].

- USB storage consisting of CDRW drive, DVD drive, Zip drive, etc... (i.e., auxiliary devices, disk drives, etc...) [fig. 5, col. 7, lines 53-60].

In addition, Chew explicitly teaches:

- A system and method for testing USB system comprising a test application and a test application driver [abstract, fig. 8, col. 1, lines 5-9];

comprising:

- peripheral devices connected to computer system [fig. 1-2].

As per claims 3 and 5:

Pearce explicitly teaches:

- A system for providing communication between a computer application executing in a real-mode environment [col. 4,



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lines 51-61] and a USB storage device [fig. 5, abstract, col. 1, lines 8-16] comprising:

- device drivers [col. 7, lines 49-50] used for computer devices to communicating with computer system [fig. 5];

Pearce does not explicitly teach:

- a computer application is a disaster recovery application and real-mode environment is the DOS OS environment.

However, Pearce does disclose capability of:

- A computer system for communicating between program executing and a hardware device including information transferring [abstract, fig. 5, col. 4, lines 51-61] comprising capabilities of:

- computer system operated in both non-USB compatible and USB compatible applications [col. 4, lines 35-38 and col. 5, lines 43-44].

- computer system including personnel computer operating system (i.e., DOS implicitly) [col. 4, lines 8-22].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention first, to realize the Pearce 's computer system operated in both

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non-USB compatible and USB compatible applications via computer operating system as being a computer application is a disaster recovery application and real-mode environment is the DOS OS environment. This is because the Pearce provides a seamless and transparent executing attempting to access a supported but unavailable computer system components. By utilizing this approach, application can easily be detected and recovered in case of failure occurred even in DOS environment since DOS is the underline OS environment which implicitly used in case of failure/recovery mode.

As per claim 6:

Pearce explicitly teaches:

- A system for providing communication between a computer application executing in a real-mode environment [col. 4, lines 51-61] and a USB storage device [fig. 5, abstract, col. 1, lines 8-16] comprising:
  - a computer system including a storage means and a processing means [col. 4, lines 35-38 and col. 5, lines 43-44].
  - a computer application capable of being executes utilizing processing means wherein computer application

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executes in a real-mode environment in which USB is not supported [col. 4, lines 8-22].

- a USB storage device coupled to computer system [col. 4, lines 34-35 and col. 6, lines 18-21].

Pearce does not explicitly teach:

- a real-mode driver operable to enable communication between disaster recovery application and USB storage device.

However, Pearce does disclose capability of:

- A computer system for communicating between program executing and a hardware device including information transferring [abstract, fig. 5, col. 4, lines 51-61] comprising capabilities of:

- device drivers [col. 7, lines 49-50] used for computer devices to communicating with computer system [fig. 5];
- controller I/O trap program to intercept communication between USB controller and CPU [col. 8, lines 15-18];
- USB control instructions used for communication between application or OS [col. 9, lines 10-22];
- a USB service routine used for communication between USB controller an external devices [col. 6, lines 18-33].

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- *computer system operated in both non-USB compatible and USB compatible applications [col. 4, lines 35-38 and col. 5, lines 43-44].*

In addition, Chew explicitly teaches:

- A system and method for testing USB system comprising a test application and a test application driver [abstract, fig. 8, col. 1, lines 5-9];

comprising:

- a USB interpreter comprising test application and a test application driver [col. 2, lines 28-30] used for communication between computer system and devices [fig. 8];

- USB interpreter used for debugging session [col. 2, lines 46-47].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention first, to realize the Pearce's computer system comprising **(device drivers )USB service routine used for communication between USB controller an external devices as well as computer system operated in both non-USB compatible and USB compatible applications** as being the real-mode driver operable to enable communication between disaster recovery application and USB

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storage device as claimed by Applicant. This is because the Pearce's USB driver (i.e., a real-mode driver) has to be employed within the computer system in order for computing devices to communicating with USB application under certain computer operating system. In addition, because the Pearce provides a seamless and transparent executing attempting to access a supported but unavailable computer system components. By utilizing this approach, data can be transferred in real time process under debugging, data recovery, or normal operation via USB means; second one would modify the Pearce to explicitly including the USB interpreter comprising test application and a test application driver used for communication between computer system and devices as taught by Chew in supporting the computer application data exchanging and storage via USB functionality.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to provide the system processor based function with a USB mechanism to enhance the communication between computer application and computing devices (i.e., peripheral communication devices, such as USB storage device). That is by performing data exchanging between or among computing devices, the computer system can execute applications for testing, debugging, data failure detection and recovery process.

As per claims 7-10:

Pearce explicitly teaches:

- A system for providing communication between a computer application executing in a real-mode environment [col. 4, lines 51-61] and a USB storage device [fig. 5, abstract, col. 1, lines 8-16] comprising:
  - USB interfaces to external device and computer system (i.e., 16 bits or higher) [fig. 5, col. 6, lines 18-25].
  - a USB storage device coupled to computer system [col. 4, lines 34-35 and col. 6, lines 18-21].

Pearce does not explicitly teach:

- interoperability of a real-mode disaster recovery application and USB storage device and control codes (i.e., Bulk interrupt protocol code, USCI/OHCI).

However, Pearce does disclose capability of:

- A computer system for communicating between program executing and a hardware device including information transferring [abstract, fig. 5, col. 4, lines 51-61] comprising capabilities of:

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- a USB service routine used for communication between USB controller and external devices [col. 6, lines 18-33].
- computer system operated in both non-USB compatible and USB compatible applications [col. 4, lines 35-38 and col. 5, lines 43-44];.
- interrupt service request from USB [col. 9, lines 48-50];
- converter code used for memory and other computing device communication [col. 5, lines 43-49].

In addition, Chew explicitly teaches:

- A system and method for testing USB system comprising a test application and a test application driver [abstract, fig. 8, col. 1, lines 5-9];  
comprising:
  - a USB interpreter comprising test application and a test application driver [col. 2, lines 28-30] used for communication between computer system and devices [fig. 8];
  - USB interpreter used for debugging session [col. 2, lines 46-47].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention first, to realize the Pearce's computer system comprising USB

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service routine used for communication between USB controller and external devices, interrupt service and converter code as well as computer system operated in both non-USB compatible and USB compatible applications as being the interoperability of a real-mode disaster recovery application and USB storage device and control codes (i.e., Bulk protocol code, USCI/OHCI).as claimed by Applicant. This is because the Pearce's USB driver (i.e., a real-mode driver) has to be employed within the computer system in order for computing devices to communicating with USB application under certain computer operating system. By utilizing this approach, data can be transferred in real time process under debugging, data recovery, or normal operation via USB means; second one would modify the Pearce to explicitly including the USB interpreter comprising test application and a test application driver used for communication between computer system and devices as taught by Chew in supporting the computer application data exchanging and storage via USB functionality for the same reasons set forth as described in claim 6, **supra**.

As per claims 11-13:

Due to the similarity of claims 11-13 to claims 2 and 4-5; therefore, these claims are also rejected under the same rationale applied against claims 2 and 4-5. **In addition, all of**



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the limitations have been noted in the rejection as per claims 2 and 4-5.

As per claims 14-20:

Due to the similarity of claims 14-20 to claims 1-5 and 6-13 except for a method for providing real-mode USB support for a computer application executing in a real-mode environment to enable communication between the computer application and a USB mass storage device steps including executing computer application step, providing a USB storage device steps, utilizing a real-mode driver steps, etc... instead of a system for providing real-mode USB support for a computer application executing in a real-mode environment to enable communication between the computer application and a USB mass storage device means including executing computer application means, providing a USB storage device means etc...; therefore, these claims are also rejected under the same rationale applied against claims 1-5 and 6-13. In addition, all of the limitations have been noted in the rejection as per claims 1-5 and 6-13.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (703) 305-9408. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel, can be reached on (703)305-9713. The fax phone number for this Group is (703)746-7240.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 746-7239, (for formal communications  
intended for entry)

**Or:**

(703) 746-7240 (for informal or draft  
communications, please label "PROPOSED" or  
"DRAFT")

Hand-delivered responses should be brought to Crystal  
Park II, 2121 Crystal Drive, Arlington. VA., Sixth  
Floor (Receptionist).



**DIEU-MINH THAI LE  
PRIMARY EXAMINER  
ART UNIT 2114**